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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/641,667	08/18/2000	John S. Fox	FOX 0001P	6732

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William C. Fuess  
FUESS & DAVIDENAS  
10951 Sorrento Valley Road  
Suite II-G  
San Diego, CA 92121-1613

EXAMINER

CHEU, CHANGHWA J

ART UNIT	PAPER NUMBER
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1641

DATE MAILED: 08/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 09/641,667	Applicant(s) FOX, JOHN S.	
	Examiner Jacob Cheu	Art Unit 1641	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 08 June 2005.  
 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.  
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-17, 103, 104 and 106-136 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) ☒ Claim(s) 1-17, 103, 104, 106-115 and 120-124 is/are allowed.  
 6) ☒ Claim(s) 116-119, 125, 129 and 133 is/are rejected.  
 7) ☒ Claim(s) 126-128, 130-132 and 134-136 is/are objected to.  
 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☐ All    b) ☐ Some \*    c) ☐ None of:  
         1. ☐ Certified copies of the priority documents have been received.  
         2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
         3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

*HC*

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### **DETAILED ACTION**

Applicant's amendment filed on 6/4/2005 has been received and entered into record and considered.

The following information provided in the amendment affects the instant application:

1. Claims 18-102 and 105 are cancelled.
2. Claims 117-136 are added to the instant application.
3. Claims 1-17, 103-104 and 106-136 are under examination.

### ***Claim Rejections - 35 USC § 112***

#### ***New Matter***

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 116-119 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The newly added claim 116 recites "subjecting a substantially planar sample of said target-probe complex to an applied magnetic field" is a new matter. Examiner cannot find support of this feature from the specification. It would be appreciated that applicant can point out the support from specification in the subsequent reply.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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4. Claims 116-119, 125-136 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to claims 116, it is not clear what is the “substantially planar sample” in the claim language. It is not clear whether this feature is a necessity for “raster-scan motion” as recited in the claim language. Applicant needs to clarify.

With respect to claim 125, line 10, “plane of sample the so as to induce” is vague and indefinite. It is suggested that applicant deletes “the” from the context for clarity.

With respect to claim 129, line 13, “measuring and characterizing with a magnetic sensor a magnetic field of said target-probe complex field so as to identify and determine any of the presence, location, orientation and quantity of the target-probe complex” is vague and indefinite. It is not clear what applicant measuring or characterizing “magnetic field”, and it is also not clear how this “magnetic field” relates to the presence or location to the analyte. Unlike the rest of claims which all specify a particular parameters, such as swing time, spatial orientation, giant magnetoresistive ratio, there is no specification with respect to this “magnetic field”. Applicant needs to clarify.

With respect to claim 133, line 11, it is not clear about what applicant means “forcibly moving” magnetic field.

#### ***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 125, 129 and 133 are rejected under 35 U.S.C. 102(b) as being anticipated by Fox et al. (WO 96/05326).

Fox et al. teach a biochemical assay for detecting the presence of target molecules, such as DNA, RNA, proteins or antibody in a sample. Fox et al. teach contacting the sample with a magnetic probe to form target-probe complex, apply magnetic field so as to induce magnetization of the probe-target complex and measure the magnetic signal to determine the presence, location and quantitation of the target molecules (See Abstract, page 4-5).

With respect to claim 133, the recited feature of “forcibly moving the target-probe complex relative to the applied magnetic field”, Fox et al. also teach juxtaposition of complex to align the magnetic moments with the magnetic sensor (See claim 15; page 7, second paragraph).

7. Claims 125 and 129 rejected under 35 U.S.C. 102(e) as being anticipated by Babino et al. (US 6365124).

Babino et al. teach a method to detect tumor-cell in a sample. Babino et al. teach using magnetic labeled probes to bind to the target tumor cells where the complex of probe-target cells can emit magnetic signal for one to localize and quantify the distribution of the tumor cells (Col. 22, line 5-15).

*Response to Applicant's Arguments*

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8. The rejections of 35 USC 102 (b) as anticipated under Rohr (US 5445970) are withdrawn.

9. Applicant had amended and incorporated the allowable subject matters into claims 1-17, 103-104 and 106-124 according to the previous Office Action. However, the newly added claims 125, 129 and 133 remain anticipated by prior arts under Fox et al. and Babino et al. as detailed in this Office Action.

#### ***Allowable Subject Matter***

10. Claims 126-128, 130-132, 134-136 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

#### ***Conclusion***

11. Claims 1-17, 103-104, 106-115, 120-124 are allowed.

The following is a statement of reasons for the indication of allowable subject matter: The following is a statement of reasons for the indication of allowable subject matter: no prior art teaches or fairly suggests that measuring or characterizing magnetic features, such as swing time, spatial orientation, hysteresis loop, or the signal generated by a magnetoresistive ratio sensor to detect the presence, location or quantity of the target molecules. The closest prior art is the teaching of Fox et al. (WO 96/05326). However, Fox et al. do not disclose or suggest the above mentioned features as a measuring tool for detection of biomolecules in a sample.

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12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jacob Cheu whose telephone number is 571-272-0814. The examiner can normally be reached on 9:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long Le can be reached on 571-272-0823. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jacob Cheu

Examiner

Art Unit 1641

August 12, 2005



LONG V. LE  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1600

02/17/05